Memorandum

To: **200/ Elka Forbes**

CC: **250/ Water Program Manager**

From: **250/ Rebecca Ford**

Date: **April 29, 2008**

Re: **Drinking Water Sampling Results – Building 90**

Proxtronics Inc. conducted routine drinking water sampling for Goddard Child Development Center (GCDC) Building 90 for analyses of Alkalinity, Bacteria, Free Available Chlorine, Chloride, Haloacetic Acids, Hardness, Metals, Nitrate, Orthophosphate, pH, Sulfate, Temperature, Total Dissolved Solids, Total Organic Carbon, and Total Trihalomethanes content. Samples were collected from the utility sink at GCDC. Environmental Scientists, Alexia A. Martinez and Rebecca Ford, conducted the sampling on March 12, 2008. Both samplers are certified in the State of Maryland to collect drinking water samples.

Samples were collected in accordance with the Environmental Protection Agency (EPA) Sampling Procedures. Samples were sent to GPL Laboratories, LLLP. GPL is certified by the State of Maryland to perform drinking water analysis.

A table is enclosed with all results from this sampling event and the corresponding standards. The following is an outline of parameters that did not meet the target:

- Orthophosphate is added to the water by the water provider, Washington Suburban Sanitary Commission, at a concentration of 1,000 μg/L in order to coat the distribution system piping. This helps prevent corrosion and the release of lead and copper from pipes and fittings. The concentration was found to be 350 μg/L. This chemical is apparently consumed before reaching GSFC. This level may not be sufficient to prevent corrosion in the distribution system and may result in elevated levels of metals in the water. However, samples taken after flushing found the metals levels to be below the MCL and thus not a concern.

- The Langlier Index is an indication of the water's likeliness to corrode pipes and fittings. Building 90 was found to be mild to moderately corrosive. Corrosion can lead to the leaching of metals into the water distributed, especially after remaining stagnant in the piping for an extended period of time, such as overnight. As mentioned previously, all metals were below the respective MCLs therefore the water does not appear to be sufficiently corrosive to cause the release of metals into the water distributed.

Sincerely,

Rebecca R. Ford
Water Program Lead, Code 250
Proxtronics Goddard Team

Enclosure

Results of Quarterly Child Development Center Sampling

Date	Time	Bldg	Location	Analyte	Results	Standard and Type		
3/12/2008	10:07	090	kitchen sink	Alkalinity	25,000 ug/l	ug/l	NA	Sample# 20080312-090
				Bromodichloromethane	8.5 ug/l	80 ug/l	P	
				Bromoform	<0.5 ug/l	80 ug/l	P	
				Cadmium	<0.25 ug/l	5 ug/l	P	
				Chloride	37,000 ug/l	250,000 ug/l	S	
				Chloroform	25 ug/l	80 ug/l	P	
				Copper	6.4 ug/l	1,000 ug/l	S	
				Degrees C	12.2 degrees C	degrees C	NA	
				Dibromoacetic Acid	<1 ug/l	60 ug/l	NA	
				Dibromochloromethane	1.7 ug/l	80 ug/l	P	
				Dichloroacetic Acid	12 ug/l	60 ug/l	P	
				Fecal coliform	<1.1 CFU	CFU	NA	
				Free available chlorine	720 ug/l	4,000 ug/l	P	
				Haloacetic acids	26 ug/l	60 ug/l	P	
				Hardness	65,000 ug/l	ug/l	NA	
				Heterotrophic plate count	299 CFU	500 CFU	P	
				Iron	78.2 ug/l	300 ug/l	S	
				Langlier Index	-1.52 units		NA	
				Lead	<1 ug/l	15 ug/l	AL	
				Monobromoacetic Acid	<1 ug/l	60 ug/l	NA	
				Monochloroacetic acid	<2 ug/l	60 ug/l	P	
				Nitrate	1,000 ug/l	10,000 ug/l	P	
				Orthophosphate	350 ug/l		NA	
				pH	7.1 pH	6.5-8.5 pH	S	
				Sulfate	11,000 ug/l	250,000 ug/l	S	
				Total Coliform	<1.1 CFU	0 CFU	P	
				Total Dissolved Solids	52,000 ug/l	500,000 ug/l	S	
				Total organic carbon	2,000 ug/l	ug/l	NA	
				Total trihalomethanes	35.2 ug/l	80 ug/l	P	
				Trichloroacetic Acid	14 ug/l	60 ug/l	P	
				Zinc	5.4 ug/l	5,000 ug/l	S	
	0:00	Blank		Bromodichloromethane	<0.5 ug/l	80 ug/l	P	Trip Blank
				Bromoform	<0.5 ug/l	80 ug/l	P	
				Chloroform	<0.5 ug/l	80 ug/l	P	
				Dibromochloromethane	<0.5 ug/l	80 ug/l	P	

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P = Primary Standard S = Secondary Standard (Aesthetics) AL = Action Level NA = Not Applicable (No standard)